A Randomized Trial of Hospital Vs Home Self Administration of Vaginal Misoprostol for Medical Abortion

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ABSTRACT

Background

A combination of mifepristone followed after 24 hrs by misoprostol has proved a safe and effective abortifacient for termination of early pregnancy. Home use of misoprostol for medical abortion is still controversial in many countries including ours where women's literacy rate is low. Particularly in developing countries, this method markedly decreased the hospital visit which would be beneficial to patients and hospital staff.

Objective

To see whether the home self administration of vaginal misoprostol was equally effective as administered by trained staff in terms of successful termination of early pregnancy. Secondary outcomes were bleeding and pain duration during medical abortion, side effects, reason for termination of pregnancy and women's acceptability of the procedure.

Method

One hundred and eighty eight women requesting medical abortion with pregnancy less than 63 days gestation were randomized into two groups either self administration of vaginal misoprostol (800 mcg) at home or hospital administration 24 hours after oral 200 mg mifepristone. Ultrasound was performed after 14 days to confirm complete abortion.

Result

The overall success rate was similar in two groups: 89.13% on home group Vs 86.9% in hospital group. Eleven out of 18 women (61.1%) having incomplete abortion had successful termination after 2nd dose misoprostol(400 mcg). None of the women had continued pregnancy. Multigravida had slightly higher risk of failure (R.R: 1.04).

Conclusion

Home self administration of vaginal misoprostol was safe and effective for early termination of medical abortion and was acceptable. Use of extra dose of misoprostol has advantage of higher completion rate of abortion.

KEY WORDS

Medical abortion, mifepristone, misoprostol

INTRODUCTION

A combination of mifepristone, followed after 24 to 48 hrs by misoprostol has proved a safe and effective abortifacient for termination of early pregnancy.[1-4] The efficacy rate for complete abortion ranges from 87% to 97%.[5]

Although misoprostol can be administered orally, buccaliy, sublingually or vaginally, it is seen that vaginal administration of misoprostol is more effective and better tolerated than oral.[6] A major obstacle in medical terminations is the need for several visits to the clinic.[7]

Although studies has shown that vaginal administration of misoprostol at home is safe option up to 63 days gestation, home use of misoprostol is still controversial in many countries.[8,9] Home administration of misoprostol became the standard treatment in the USA, in contrast, most countries in Europe still do not allow home use of misoprostol for termination of pregnancy.[10]

Developing countries like Nepal where the women's literacy late is low, home use of misoprostol is still in dilemma to most of the clinicians. Thus we wanted to see whether the home self administration of vaginal misoprostol is equally effective as administered by trained staff in terms of complete abortion, so that we can propose home administration of misoprostol safely which will be so much beneficial to the countries like ours where there is a shortage of service capacity for the provision of abortion. The other secondary outcome measures are: bleeding and pain duration during medical abortion, side effects, reason for termination of pregnancy and women's acceptability of the procedure.

METHODS

This prospective randomized controlled study was undertaken among women requesting legal termination of pregnancy at a gestation up to 63 days in the department of Obstetrics and Gynecology, Chitwan Medical College teaching hospital from 1st April 2011 to 15th August 2012. Women requesting medical abortion were provided with information about the study, screened for eligibility and enrolled in the study if they were healthy, more than 18 years, agreed to surgical termination of pregnancy if the treatment fail.

Women with any indication of serious past or present illness were excluded as well as those allergic to mifepristone or misoprostol and those with disorders representing a contraindication to the use of mifepristone (Such as chronic adrenal failure, severe asthma, coagulopathy or anticoagulant use, active liver disease, and inherited porphyria). Estimated Gestational Age was based on the last menstrual period, however, if clinical examination did not correlate or women had doubt about last menstrual period, the ultrasound estimation was used.

The study was approved by the local IRC- board CMCTH. All women gave written informed consent prior to participation in the study. Eligible women were allocated randomly to two groups using a computer generated randomization sequence in blocks of variable size: Group A- received vaginal administration of misoprostol by trained hospital staff (the control group) and group B- self administration of vaginal misoprostol at home (the study group).

All women were given 200 mg mifepristone to take orally in the hospital. Women of the study group (i.e. home self administration of misoprostol) were given four tablets of 200 mcg misoprostol to insert vaginally at home 24 hours later after giving detail instructions. Women of the control group were asked to return after 24 hours to receive the misoprostol 800 mcg vaginally by trained staff in the hospital and send home after half hour of rest. All women received 100 mg Nimesulide (analgesic) at the time of misoprostol insertion asked to use same drug if necessary later for pain management.

All women were asked to follow up after 14 days of misoprostol administration and ultrasound was performed. They were also given instructions to come to hospital if vaginal bleeding exceeded two soaked sanitary towels in one hour for two consecutive hours. During follow up, they were questioned about side effects, duration of bleeding and pain, overall acceptability about the procedure, bleeding, abdominal cramping and side effects.

Outcomes; the primary outcome was the efficacy of the treatment in achieving complete abortion, defined as passage of the products of conception without the need of surgical evacuation. Failure to achieve complete abortion was classified into: (1) incomplete abortion (products of conception passed but clinical or ultrasound signs of incomplete abortion. (2) Missed abortion (retained gestation sac but no cardiac activity. (3) Continuing pregnancy (live pregnancy with cardiac activity).

During 14 days follow up if USG showed small retained product of conception (POC) or clinically incomplete abortion 2nd dose 400 mcg misoprostol was administered vaginally and asked to follow after one week to review USG. If the ultrasound scan on day 25-30 showed retained POC or still she had bleeding, the woman was offered a surgical termination of pregnancy. All women were permitted at any time to request a surgical procedure rather than continuing to wait for expulsion.

Those women who did not attend the follow up scan answered questionnaires over the phone and complete abortion was confirmed by negative pregnancy test carried out at home and regained regular normal menstrual period. Women were considered lost to follow up when their outcome of treatment was unknown and could not contact them by telephone in spite of several attempts. Thus they were excluded from analysis.

Sample size was estimated based on pilot study done in this hospital showing the complete abortion rate of 86%.

A sample of 188 women was calculated to have an alpha error of 0.05 to detect difference. Data were entered in Epi-info program and were analyzed with both Epi-info and SPSS software. Mean values were compared with one- way ANOVA and Chi- square test used for frequency tables.

RESULTS

One hundred and eighty eight women were enrolled in this study that was randomized to group A (control) and group B (study): 94 in each group. Four women, two from each group lost to follow up despite several attempts to contact by phone and excluded from analysis. Thus final analysis was performed in 184 women- 92 in each group. Baseline demographics of the two study groups were similar (Table 1).

Table 1. Baseline characteristics of women by group

Characteristics	Group A (n=92)	Group B (n=92)	P-value
Age (mean years)	27.3 ± 5	27.4 ± 4.9	0.8
Gravidity(mean)	2.9±1.2	3.04 ± 1.6	0.6
Primi(N)	10	14	
Multi(N)	82	78	0.2
Parity(mean)	1.5 ± 0.9	1.6 ± 1.2	0.7
married	90	92	0.25
Spontaneous abortion			
1	23	16	
≥2	3	5	0.6
Induced abortion			
1	6	7	
≥2	1	2	0.4
Period of gestation(mean)	44.4 ± 7.6	45.5 ± 7	0.3
<49 days	59	58	
50-63 days	33	34	

Women education level and reason given for termination of pregnancy were similar in two groups (table 2). Almost 20% women were either illiterate or just studied up to primary school and more than 75% women were not gone beyond high school. In both group more than 60% (114) women were housewife, 11.4% (21) worked as labor,8.6% (16) were high class officer and rest as miscellaneous. In both group more than 35 % (66) of husband were working away from home like army, police or outside the country. The reason given for termination of pregnancy was completed family in more than 50% of women and other reasons were shown in table 2.

The primary outcome of the study was shown in table 3. The overall successful termination rate of medical abortion (not required surgical evacuation) was 88.04% in total, which was almost similar in two groups (group A: 86.9%; group B: 89.1%). None of women in either group had continuing live pregnancy. Eighteen women with incomplete abortion

Table 2. Women education level and reason for termination of pregnancy

	Group A (N=92)	Group B (N=92)
Education		
Illiterate/prim school	19(20.6%)	16(17.3%)
High school	52(56.5%)	52(56%)
Bachelor	17(18.4%)	17(18.4%)
Graduate	4(4.3%)	7(7.61%)
Reason for termination		
Complete family	50(54.3%)	50(54.3%)
Spacing	28(30.4%)	28(30.4%)
Studies	10(10.8%)	8(8.7%)
Financial	2(2.1%)	6(6.52%)
Unmarried	2(2.17%)	0

Table 3. Efficacy outcome of two groups

	Group A (n=92)	Group B (n=92)	Relative risk (95% CI)
Successful termination			
Complete termination with			
1st dose	76	75	
2nd dose	4	7	
Overall successful termination	80(86.9%)	82(89.13%)	1.2 (0.5-2.6) p-0.32
Failed termination			
Small retained poc˚	10	10	
Non viable gest. sac˚˚	2	0	
Overall failed termination	12(13.04%)	10(10.8%)	
˚poc: product of conception ˚˚gest: gestation sac			

received 2nd dose misoprostol in which 11 (61.1%) had successful termination in next one week follow up and rest seven had surgical evacuation. Two women one from each group need repeat surgical evacuation for persistent bleeding after first evacuation. Histopathological examination revealed molar pregnancy. Both of them were managed as protocol of molar pregnancy. Among 22 women who had failed medical abortion, 15 women refused to take 2nd dose misoprostol and directly underwent surgical evacuation on two to three week follow up.

Stratified analysis of the risk of failure of medical abortion showed that women of higher gravidity and parity had slightly higher risk but was not statistically significant. Relative risk (RR) being 1.04 (CI 0.9-1.19) for multigravida compare to primigravida. Also successful termination of pregnancy was similar in both women with gestation below 49 days and with gestation of 49-63 days (RR=0.6, CI 0.3-1.5; p-0.17).

There was no statistically difference between the two groups in terms of the time intervals from the administration of vaginal misoprostol to the start and end of vaginal bleeding and abdominal cramps (Table 4).

Table 4. Bleeding and cramping after misoprostol

	Group A (n=92)	Group B (n=92)	P-value
Mean onset of bleeding after misoprostol (hrs)	2.4± 2.5	2.1± 1.4	0.3
< 2hrs	72(78.2%)	77(83.7%)	
>2 hrs	20(21.7%)	15(16.3%)	
Mean onset of cramping after misoprostol (hrs)	2.08± 1.3	1.7± 1.1	0.08
Mean total days of bleeding	9.9± 6.7	9.6±6.1	0.7
Mean total days of cramping	2.01± 1.8	2.1± 1.7	0.6

Average days of heavy bleeding (more than normal menses) experienced by women was 2.5 (1-15) days.

Only one woman (gravida 10 para 8) had excessive vaginal bleeding that soaked two sanitary pads in one hour for two consecutive hours and received surgical currratege in emergency ward. Three women had started bleeding before insertion of misoprostol and one had started after 24 hours. None of the women experience abdominal cramping before insertion of misoprostol. Seven women did not experience pain and no analgesia was required at any time, all of these women aborted successfully.

There was no statistically significantly difference between the groups in their side effects, patients overall acceptability of the procedure, vaginal bleeding, abdominal cramps and adverse effects except for nausea (Table 5).

Table 5. Side effects and patient acceptability on medical abortion

	Group A (n=92)	Group B (n=92)	P-value
Nausea	15(16.3%)	5(5.4%)	0.009
Vomiting	6(6.5%)	5(5.4%)	0.3
Diarrhoea	4(4.3%)	4(4.3%)	0.5
Headache	14(15.22%)	10(10.87%)	0.1
Dizziness	13(14.13%)	12(13.04%)	0.4
Sweating	2(2.1%)	2(2.1%)	0.5
Acceptable vaginal bleeding	66(71.7%)	64(69.5%)	0.3
Acceptable cramping	63(68.48%)	53(57.6%)	0.06
Acceptable adverse effects	84(91.3%)	86(93.4%)	0.2
Overall acceptability			
Satisfied	77(85.7%)	77(83.7%)	
Do not know	5(5.4%)	7(7.6%)	
dissatisfied	10(10.8%)	8(8.7%)	

DISCUSSION

The overall success rate of medical abortion was almost similar with home self administration of vaginal misoprostol and administered by trained staff in the hospital. Thus home self administration of vaginal misoprostol is safe and effective for early medical abortion. The overall success rate was slightly lower than the internationally reported 89% -97%.[10,11-14] The reason for this is we rely heavily on USG to determine complete abortion. The studies showing higher success rate has waited for one month or even up to 40 days so that small debris will evacuate naturally and do not require surgical intervention. The other reason for higher failure rate of our study is 15 (out of 22) women refused to take 2nd dose misoprostol and had earlier surgical evacuation. Thus we recommend to use extra dose (400 mcg) of misoprostol if women is still bleeding after two weeks. As previous studies and even in our study 61% of women having retained poc aborted spontaneously after 2nd dose avoiding surgical intervention.[12]

The safety of medical abortion with vaginal administration of misoprostol at home has been consistent with other studies.[10,11] Patients who had no or scanty bleeding or persistent bleeding more than 14 days are advised to follow up in the hospital. We also want to recommend counseling to women to do urine pregnancy test after five weeks of medical abortion so that chances of having molar pregnancy or continuing pregnancy will not be there even they lost to follow up.

Our patients reported fewer side effects than French and USA studies.[15] Vaginal administration of misoprostol was associated with a lower frequency of adverse effects as shown by Hertzen et al. None of the women in either group had serious problems enough to have medical consultation. In contrast to 29% women of USA study received narcotic analgesia, women of our study needed only NSAID.[4]

It is better to have histopathological examination of all surgically evacuated tissue after failed medical abortion so as not to miss molar pregnancy. Even in our study molar pregnancy is detected in two cases that had repeat surgical evacuation.

As medical termination of pregnancy is not a long term solution, there is need of contraceptive counseling especially focused to the women having completed family (50% in our study) and to those whose husbands (35% in our study) were working outside and just come for short period.

Prophylactic antibiotics are not used in this study as recommended by previous studies except for those who had surgical intervention and none of them reported with upper genital tract infections.[16,17] We also noted that women having vaginal bleeding earlier (<2 hrs) following misoprostol administration had significantly more successful termination as compared to women with bleeding after two hours. Further studies are needed to explain and justify this finding.

CONCLUSION

Home self Administration of vaginal misoprostol is safe and effective for early termination of medical abortion, particularly as most patients prefer the privacy of their

homes and also has the advantage of reducing the costs of treatment by decreasing the number of office visits. Use of extra dose of misoprostol has advantage of higher complete abortion rate.

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